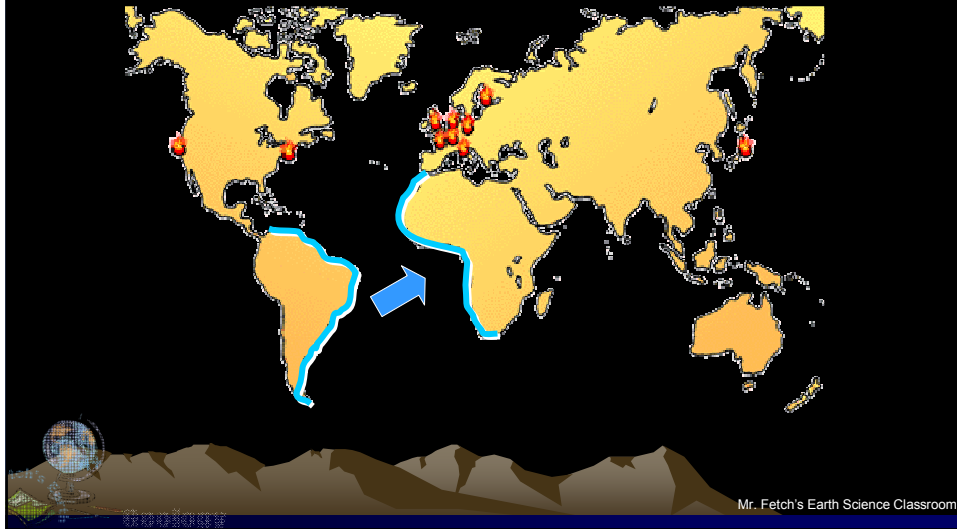


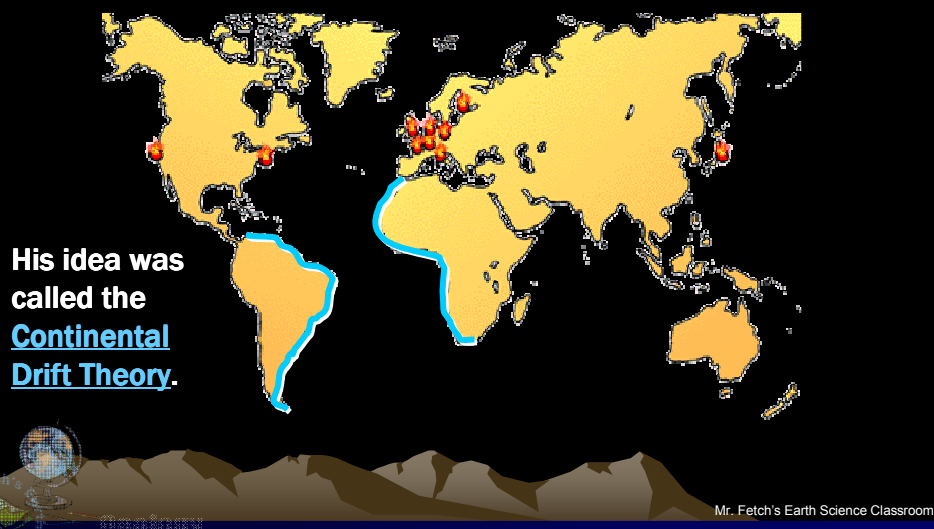
Alfred Wegener

If you look at a map of Earth's surface, you will notice that the edges of some of the continents look like they fit together.



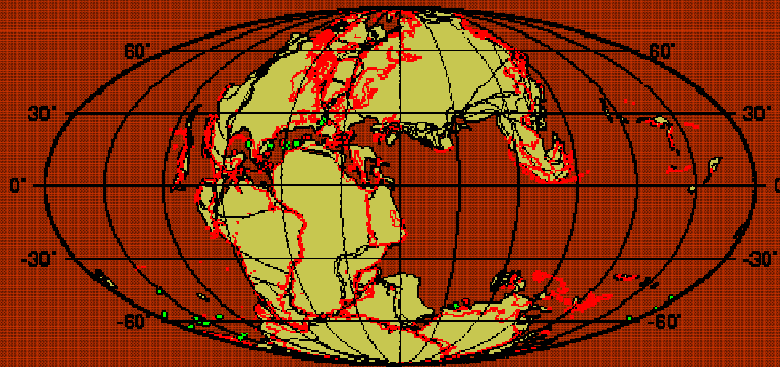
Alfred Wegener

A German meteorologist, Alfred Wegner, proposed that the continents were once together, but drifted apart over time.



His idea was called the Continental Drift Theory.

Alfred Wegener

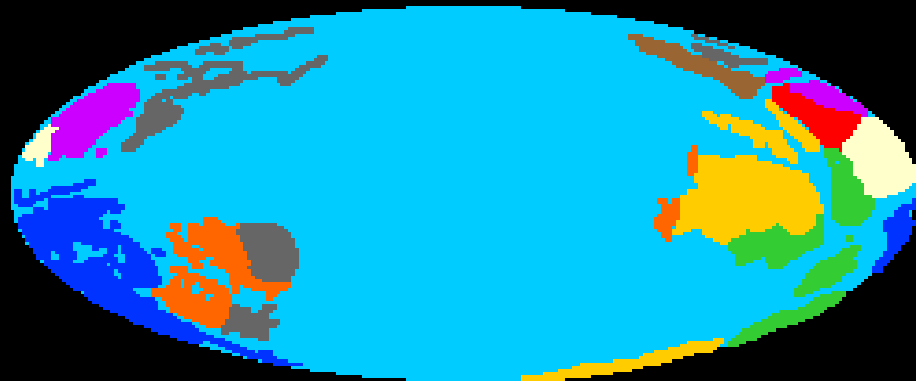


150 My Reconstruction

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Alfred Wegener

Continental Drift



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Pangaea

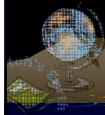
Alfred Wegener
together &
means "a

This land
broke up
separate
continents
about 20
million years
ago.



which

Pangaea
250 MYA



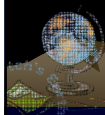
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Pangaea

There was no Atlantic Ocean at this point.
Pangaea was surrounded by a world ocean called Panthalassa

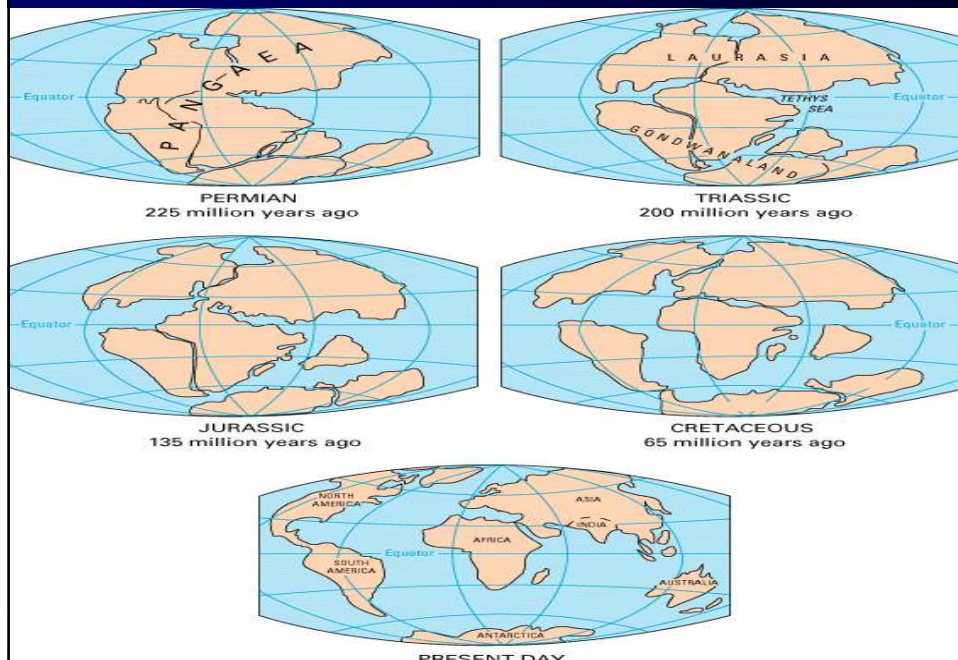


Pangaea
250 MYA



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Pangaea Over Time...

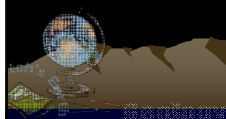


Pangaea Proof

Wegener's idea of continental drift was controversial.
People wanted proof that this has and is occurring.

To prove his idea,
Wegener found 4
major pieces of
evidence:

1. Shape
2. Fossils
3. Climates
4. Rocks



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Proof: Fossil clues

Fossils of the same species were found on different continents.

Example 1: MESOSAURUS

-Reptile that lived on land and in fresh water.

-Fossils of it found on Africa and South America.

-How is that possible?



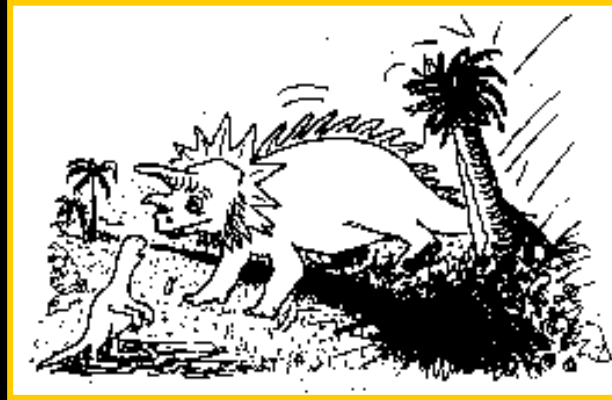
Proof: Fossil clues

ANSWER:

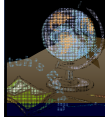
The continents were once close together so the reptile could move freely from one land mass to the next.



Proof: Fossil clues



"You'd better make a decision soon. The continents are starting to drift apart."



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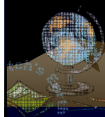
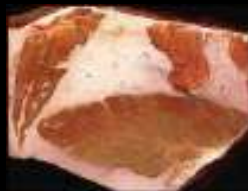
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Proof: Fossil clues

Example 2: GLOSSOPTERIS

-Same plant found on Africa, India, South America, & Antarctica.

-How is this possible ???



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Proof: Fossil clues

ANSWER:

The continents were once close together so the plant seeds were easily able to spread. It is not possible for the seeds of that plant to spread across the entire globe.

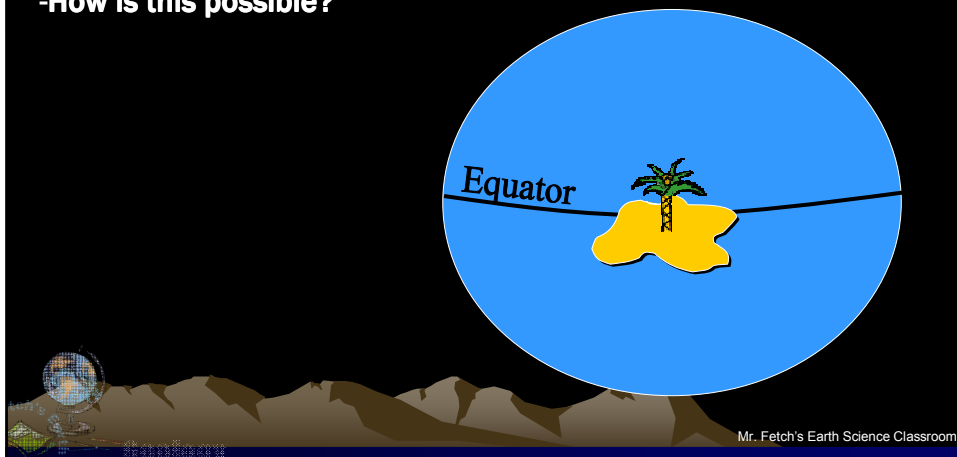


Proof: Climatic clues

Wegner noticed evidence of major climate changes.

Example 1: **TROPICAL PLANTS IN ARCTIC AREAS**

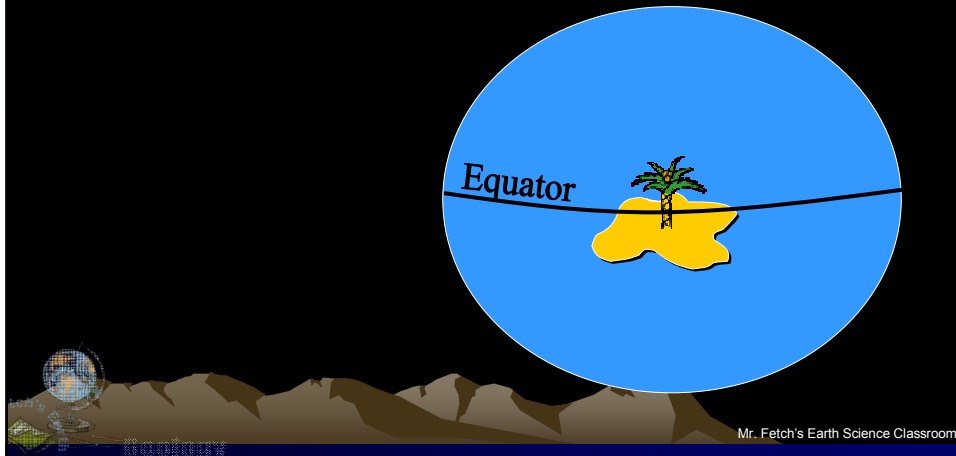
- Warm weather plant fossils were found in the Arctic.
- How is this possible?



Proof: Fossil clues

ANSWER:

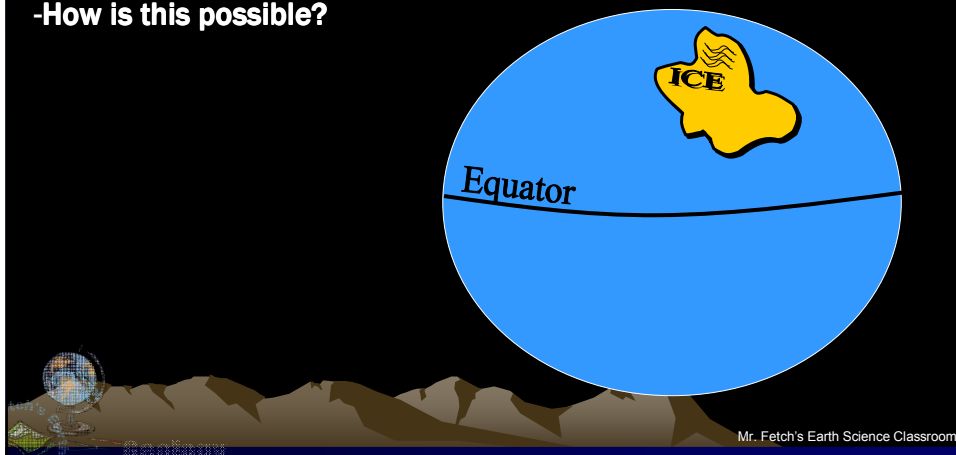
Areas of land that were once in the tropics, drifted apart and moved toward the arctic.



Proof: Climatic clues

Example 2: EVIDENCE OF GLACIERS IN THE TROPICS

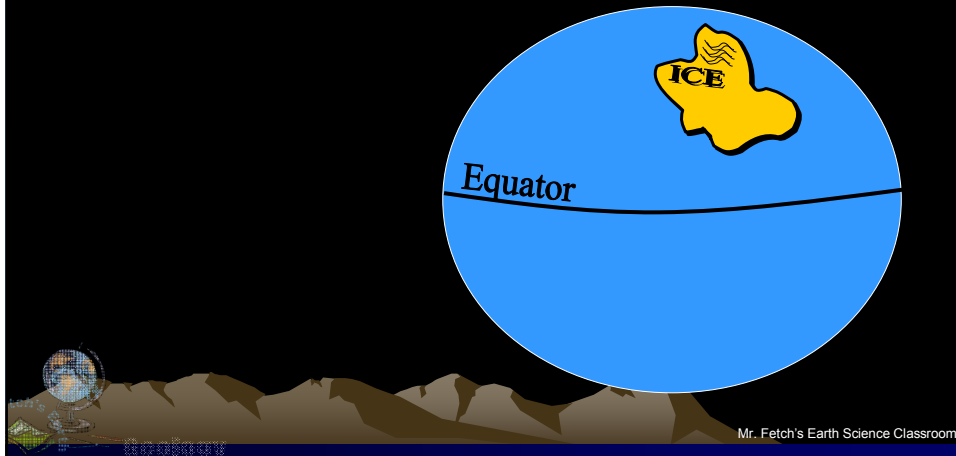
- When a glacier (chunk of ice) moves, it scratches the land.
- Glacier scratches can be seen in warm, tropical areas.
- Glacier evidence is found in areas where there are no glaciers.
- How is this possible?



Proof: Fossil clues

ANSWER:

Areas of land that were once in the arctic, drifted apart and moved toward the tropics.



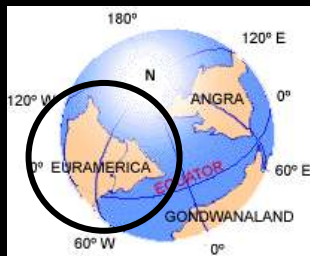
Proof: Rock clues

Rock and rock structures on different continents are the same where the land was once joined.

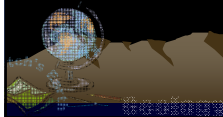
Example 1: NORTH AMERICA AND EUROPE

-Rock structures match where the Appalachian Mountains in the Eastern United States once were joined against the side of Europe.

-How is this possible?



Continental Drift Review

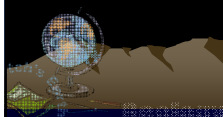
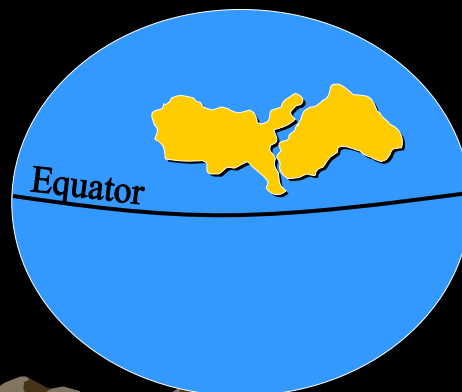


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Proof: Rock clues

ANSWER:

The continents once were together when the mountains formed and then they separated - breaking the chain as North America and Europe move away from each other.



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Proof was not enough...

Despite these 4 major pieces of evidence, geologists of Wegener's time still did not believe his idea.

The problem was that while Alfred was able to show evidence that it could have happened, he was not able to explain how or why the continents moved.

He needed to tell people what the mechanism was that was causing the “so-called” continental drift.

